

# CHIARA LISOTTI

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## PERSONAL PROFILE

I am a PhD student in the field of astroparticle physics at the University of Sydney. My research involves performing theoretical calculations regarding the directional detection of feebly interacting particles such as neutrinos and dark matter across different sources. I am fluent in English and Italian, my mother tongue.

## ACADEMIC STUDIES

### PhD Candidate in Astroparticle Physics Theory

University of Sydney

January 2023 – Present

Sydney, Australia

### First Class Honours B.A. Hons Bachelor Degree in Theoretical Physics

Trinity College Dublin

September 2018 – May 2022

Dublin, Ireland

## PAPERS AND PUBLICATIONS

*'Searching for beyond-Standard-Model solar neutrino interactions using directional detectors'*

A. Chandra Shekar, C. Lisotti, N. Mishra, C. A. J. O'Hare, L. E. Strigari

June 11, 2025

[2506.09322] Phys. Rev. D 112, 123021 (2025)

*'CYG $\nu$ S: Detecting solar neutrinos with directional gas time projection chambers'*

C. Lisotti, C. A. J. O'Hare, E. Baracchini, V. U. Bashu, L. J. Bignell, F. D., M. Ghrear, G. J. Lane, L. J. McKie, P. C. McNamara, S. Torelli

April 2, 2024

[2404.03690] Eur. Phys. J. C 84, 1021 (2024)

## BURSARIES

### Special Initiatives Funding

ARC Center of Excellence for Dark Matter

April 2025

Funding amounting to a max of 5000AUD to be used for physics outreach on social media

### Postgraduate Research Support Scheme 2025

University of Sydney Faculty of Science

March 2025

# PhD Scholarship in Dark Matter Detection

University of Sydney

📅 January 2023

## AWARDS

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### Best Talk Award

2025 ARC Center of Excellence for Dark Matter Annual Meeting

📅 November 2025

### Outreach and Impact Award

2025 ARC Center of Excellence for Dark Matter Annual Meeting

📅 November 2025

### Collaboration and Centre Values Award

2025 ARC Center of Excellence for Dark Matter Annual Meeting

📅 November 2025

### Faculty of Science Postgraduate Research Prize for Leadership

University of Sydney

📅 May 2025

## PRESENTATIONS

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### *'An overview of CYGNUS' reach for dark matter and neutrino searches 2.0'*

9th Sydney Consortium for Particle Physics and Cosmology Meeting

📅 November 27, 2025

📍 University of New South Wales, Australia

### *'Directional Detection of Boosted Dark Matter'*

ARC Centre of Excellence for Dark Matter Annual Workshop

📅 November 20, 2025

📍 Canberra, Australia

### *'An overview of CYGNUS' reach for dark matter and neutrino searches'*

ARC Centre of Excellence for Dark Matter Annual Workshop

📅 November 21, 2024

📍 Wollongong, Australia

### *'CYG $\nu$ S: Detecting solar neutrinos with directional gas time projection chambers'*

Dark Matter Centre Fortnightly Meeting

📅 April 18, 2024

📍 Remote

### *'Detecting Solar Neutrinos with Directional Gas TPCs'*

7th Sydney CPPC Meeting

📅 February 9, 2024

📍 University of Sydney

## POSTER PRESENTATIONS

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*'Searching for bSM solar neutrino interactions using directional detectors'*

Summer School on Neutrino Physics Beyond the Standard Model

📅 June 29, 2025

📍 Strasbourg, France

*'Optimising recoil imaging detectors for extraterrestrial particles'*

IDM 2024 Conference

📅 July 10, 2024

📍 L'Aquila, Italy

*'Detectability of Dark Matter and Neutrinos in a Gas TPC'*

ARC Centre of Excellence for Dark Matter Particle Physics, Annual Workshop

📅 November 10, 2023

📍 Adelaide, Australia

*'Detectability of Dark Matter and Neutrinos in a Gas TPC'*

HDR Symposium

📅 November 10, 2023

📍 University of Sydney

## TUTORING EXPERIENCE

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Tutor, Course Development

Computational Lab for 2<sup>nd</sup> Year Physics

📅 July 2024 – Present

📍 University of Sydney

Tutor

Computational Modelling

📅 January 2024 – Present

📍 University of Sydney

Course Development

Astrophysics Computer Lab for 3<sup>rd</sup> Year Physics

📅 January 2025 – February 2025

📍 University of Sydney

Tutor

Astronomy Elective Courses

📅 August 2023 – November 2024

📍 University of Sydney

## COMMITTEE WORK

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Committee member

Mentoring Committee

📅 August 2023 – Present

📍 ARC Centre of Excellence for Dark Matter Particle Physics

## HDR Student Representative

School of Physics

📅 2024 – 2025

📍 University of Sydney

## Committee member

Faculty of Science Conference Organising Committee

📅 May 2024 – September 2024

📍 University of Sydney

## Committee member

HDR Symposium Committee 2023

📅 August – November 2023

📍 University of Sydney

# OUTREACH AND PUBLIC ENGAGEMENT

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## ‘DMystified’

Social Media Dark Matter and Physics Outreach

📅 April 2025 – Present

📍 Remote

## Volunteer

STEMPals Program

📅 March 2024 – Present

📍 Remote

## Volunteer

Dark Matter Outreach in Schools

📅 June 2025

📍 Rural NSW

## Mentor

Science Extension Program

📅 October 2024 – May 2025

📍 Remote

## Volunteer

*"National Quantum & Dark Matter Road Trip 2024"* DemoDay Event

📅 August 2024

📍 University of Sydney

## Volunteer

*"National Quantum & Dark Matter Road Trip 2023"* DemoDay Event

📅 July 2023

📍 University of Sydney